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THE TREATMENT OF ORIENTAL SORE BY CO_2 SNOW

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The silk used at the operation had been taken a few days before from a main hank kept in the almirah; this hank was old and in a tangled condition, but it did not contain any obvious ground dirt. The short length used for the operation had been wound upon a glass slide, placed in the steriliser with the instruments and gauze, and boiled for over half an hour, so that, even had it contained tetanus spores, its sterility did not seem open to doubt.

(5) Air-borne infection during the operation: there seemed to be a fair possibility of this as the operation room was upon the ground floor, the windows and doors were all widely open and the weather was hot, and the ground dry; though, as the operation was done in the morning, there was not much wind. Upon the other hand, there had been no running to and fro during the progress of the operation, the wound had been well irrigated out before it was closed, and the operation was a short one. As I had learnt by experience to look upon air-borne infection as the excuse of a careless operator for inadequate aseptic precautions in more usual ways, I was particularly loth to accept such an explanation. I, therefore, made the Sub-Assistant-Surgeon carry out in my presence all the details which he had carried out upon the day of operation. He had placed the instruments first in the steriliser, then a flat layer of gauze to serve as sponges, and upon the top of this gauze he had placed the flat slide upon which the silk had been wound. When the water was added, the gauze floated to the top, carrying the slide with it, and even after half an hour's boiling this layer of gauze was still upon the surface: temperature of the steam over the surface of the gauze was only 82° C. From these experiments I had no doubt but that the silk ligature, so far as tetanus spores were concerned, had not been efficiently sterilised and that it was this inefficient sterilising of the silk which had been the cause of the unfortunate accident. Absolute proof of this could not be obtained, as the silk in question had been used upon several occasions, subsequent to this one operation, and upon these other occasions had been more efficiently sterilised. I did not succeed in causing tetanus infection in animals with silk from the tangled main bundle.

I report this case as an example of tetanus infection due to failure of aseptic precautions, in which it was only after the most careful enquiry that the exact method of such failure was discovered. I was used to operating and had taken, as I thought, the greatest pains to ensure asepsis. At first sight I had every reason to consider that the instruction, which I had given, had been properly carried out. The method of the accident never occurred to me until I made the Sub-Assistant-Surgeon exactly repeat in my presence his procedure; had I not done this, I would have confidently believed that the infection had taken place in spite of adequate aseptic precautions and would at that time have attributed it to air-borne infection, in which the germ, being tetanus, had not unnaturally remained localised in the neighbourhood of the most deeply seated body, the silk ligature.

THE TREATMENT OF ORIENTAL SORE BY CO_2 SNOW.

By H. H. BROOME,

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SOME eight months ago I sent a brief note to the *I. M. G.* on the treatment of Oriental sore by CO_2 snow which was based on a personal experience. Since that time the method has been in constant use in Lahore, and a large number of cases have been treated, on the results of which I now propose to offer some remarks. These observations are drawn from the records of 50 patients who attended the out-patient department until sound healing was considered to have occurred. Many patients do not return after the first or second application of the snow, and a still larger number stay away when they consider the trouble is cured, so that, in spite of the great numbers treated, it is difficult to keep many cases under observation until complete healing has resulted. Before discussing these cases I must refer to the sore on my own wrist which was the subject of my first communication.

This sore, which I had looked upon as healed, four weeks later broke down in the centre, and though no Leishman-Donovan bodies could be discovered in it, there can be no doubt but that it was a recurrence. The scar in which the ulceration occurred, was composed of thick tissue, which I have since learned to look upon as unhealthy, and which I now destroy. It was treated by further application of the snow for 30 seconds, and this had to be repeated on two more occasions at intervals of twelve days before final healing resulted. The scar which is now five months old, is thin, supple, and scarcely noticeable.

Another sore which was present on the flexor surface of my right forearm, and in which the Leishman-Donovan bodies were detected, required three applications of the snow at intervals of 12 days for its cure. This sore had a duration of eight months and was just beginning to ulcerate when the treatment was undertaken.

Turning to the cases treated, the following points may be noticed:—

Age.—The patients were of all ages, from childhood to old age, the majority being young adults.

In the children the process of repair after the application of the snow was quicker, and the period of treatment rather less than in the adult.

Number of Sores.—In the majority, 28 cases, only one sore was present. Thirteen cases had two sores, and the remainder three or four.

Situation.—The sores are most commonly situated on the dorsal surface of the forearm and hand including the fingers. The face also is a favourite site, the cheeks or nose being usually affected. They are very rare on the forehead and in this series no case is recorded in that region.

The lower limb is much less frequently involved than the upper limb or the face.

On the body Oriental sore is comparatively rare.

Duration.—This was very variable, ranging from one month to 1½ years. The majority of the sores had been present for from four to six months.

Leishman-Donovan Bodies.—These were not looked for in every case as the clinical condition is sufficiently characteristic. In twelve patients, however, the bodies were detected.

Remarks on the Treatment.—The appearance of the sore after the application of the snow and during the process of repair, having been previously described, need not be again referred to.

In many of the earlier cases, the ulcer resulting from one application of the snow, healed over in about ten days with a thick raised, white scar-tissue, the surface of which was often slightly nodular. This scar-tissue, a few days after the dressings are left off, becomes covered with white, dry, branny scales. If left alone, it will almost certainly break down, and I now destroy it by further use of the snow as soon as it commences to form.

With regard to the duration of the treatment and the number of applications of the snow, the average time taken to cure is about five weeks and the number of applications four. In this series there are only two sores which healed after one application. In one of these the Leishman-Donovan body was found and the sore had been present only for one month. It healed with a sound scar which appeared to be quite healthy seven weeks later when I again saw the patient. It may be concluded, however, that cure will not result after one cauterisation except in a very small proportion of cases. I have seen several instances of recurrence after one application, and in this series these are notes on a student who, after having three sores touched by the snow, dressed himself at home thinking he was cured. Four months later he returned with typical sores in the old scars. The question of whether the sore be ulcerated or not appears to bear upon the duration of treatment as those which are ulcerated heal quicker and with a less number of applications than those that have not broken down. This I presume is due to there being less thickness of diseased tissue to destroy.

I have also observed that sores over soft fleshy regions, such as the middle of the forearm, the buttock or the cheek, are more difficult to cure than those situated over areas where the skin passes over bones or other dense tissues. Sores on the nose, for example, heal very well under CO_2 snow treatment. I have notes on ten cases in which the results were very satisfactory, healing occurring in a comparatively short time with a thin, supple scar. In these cases no doubt the deeper parts of the diseased tissues are more effectively frozen as they are compressed between the denser structures beneath and the snow-stick.

I have not remarked that the duration of the sore has any effect upon the length of the treatment apart from the question of ulceration.

From these observations it will be seen that the treatment of Oriental sore by CO_2 snow demands a certain amount of perseverance, both on the part of the patient and of the surgeon. A number of applications are necessary and a wound which requires daily dressings remains for some weeks. It may be argued that this is no better than scraping and cauterising with Carbolic Acid. I have not had much experience of this latter treatment, but I am informed by some members of the profession who have, that recurrence is quite frequent, and that the patients will seldom submit to another operation. Moreover, for scraping, an anæsthetic is necessary. For this reason most patients prefer the CO_2 snow treatment even though it involve several applications. In fact, the method is becoming quite popular in Lahore and, on the morning of the week set apart for the purpose, there are not infrequently as many as fifteen new cases awaiting treatment.

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